Results: 29/188 patients had an inappropriate bone window for TCD and another 3 patients lacked data concerning clamp-to-shunt time. There were no significant differences between the three groups in the following characteristics: sex, age, co-morbidity, patch/no-patch and symptomatic/asymptomatic patients (t-tests). 30-day stroke/death rate increased with longer clamp-to-shunt time: 3,6%, 5,6% and 12,8% in group 1 (n=28), 2 (n=89), and 3 (n=39), respectively. We analyzed this effect using a binary logistic regression model and found a two-tailed p-value of 0,093. The confounding effect of peri-operative microembolic signals and intracranial flow decrease measured by TCD at 1 and 3 minutes after carotid cross clamping was controlled for.

Conclusions: Longer carotid-clamp-to-shunt time tends to increase 30 day stroke/death rate post-CEA in our selective shunting protocol. When clamp-to-shunt time exceeded 7 minutes, more than 1 out of 8 patients ended with stroke or death. Again, time is brain!

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PP4.

Routine Carotid Endarterectomy Without a Shunt Even in the Presence Of a Contralateral Occlusion: A Review of 2027 Procedures

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Objectives: A 20 year prospective experience with routine non-shunting during carotid endarterectomy (CEA), even in the presence of a contralateral internal carotid artery occlusion, is reviewed.

Method: Carotid endarterectomy was performed under general anesthesia *without a shunt* in 2027 consecutive CEA procedures in1780 patients: 733 procedures were performed on females and 1294 on males with ages ranging from 37 to 97 years and a mean age of 73 years. Monitoring of cerebral blood flow and/or function was not utilized in any patient. Blood pressure was maintained above 130mmHg pharmacologically. Heparin (7500U) and protamine reversal were uniformly used.

Results: A contralateral occlusion was present in 127 CEAs. 1344 CEAs were performed with a Dacron patch. Average cross clamp time was 18.5 minutes and 21 minutes for CEA without and with patches respectively (minimum 8 minutes and maximum 58 minutes). Average cross clamp time in the presence of a contralateral occlusion was 19.6 minutes. Overall, neurological complications occurred within thirty days in 33 (1.62%) patients (17 strokes [0.84%] and 16 transient ischemic attacks (TIAs) [0.79%]). There was only one stroke in a patient with a contralateral occlusion (0.79%). Immediate postoperative events, i.e. those that could be implicated as due to lack of a shunt, were rare (0.89%) (10 strokes [0.49%] and 8 TIAs, [0.39%]). There were 12 perioperative deaths (0.59%) 4 following a stroke (0.2%) and 7 (0.35%) due a cardiac event.

Conclusion: Carotid endarterectomy may be performed safely without a shunt even in the presence of a contralateral occlusion. Further, contralateral occlusion does not appear to add additional risk to CEA and should not be considered a high risk for endarterectomy.

Author Disclosures: R.H. Samson, None; **D.P. Showalter,** None; **M.R. Lepore,** None; **D.G. Nair,** None.

PP5.

Urgent Surgical Treatment of Carotid Stenosis in Patients with Acute Neurologic Deficits

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Objective: Late results from NASCET and ECST showed a greater benefit for surgery if performed within 4 weeks from symptoms. Recent studies have emphasized the risk of stroke after TIAs and of stroke recurrence after a first episode. Our aim is to describe our experience in treating symptomatic carotid stenosis in an emergency setting.

Methods: All patients admitted for acute neurologic deficits to the Stroke Unit from 1/2002 to 9/2008 were considered possible candidates to surgery. Those treated within 36 hrs from positive carotid imaging studies were reviewed. All patients received a brain CT and an ABCD2 or NIHSS score, as appropriate. Surgery was not offered if NIHSS > 22. TIA was defined by deficits lasting < 24 hrs and negative CT for 72 hrs. Stroke was defined by symptoms lasting > 24 hrs or positive CT. Neurologic complications were defined by a worsening NIHSS or new area of brain ischemia at CT. End points were perioperative death / neurological morbidity as per NIHSS.

Results: Among 55 patients (40 male, mean age 69±9.8 yrs), 17 were admitted for TIA (3 amaurosis, 8 single TIA, 6 recurrent) with a mean ABCD2 score of 3.2±1.6 at admission; 38 had a stroke (34 minor, 4 stroke in evolution), with a median NIHSS of 3 (IQR 2-7.5); 14 of them had a positive CT. Median time from symptoms to observation was 4 hrs (2-7), from observation to surgery 34 hrs (9-115), with no difference between TIAs and strokes. We performed 54 endarterectomies (37 patch, 14 direct, 3 eversion) and 1 embolectomy. Local or regional anesthesia was used in 20 patients and general in 35. Among TIAs 1 patient died of an MI and 2 patients suffered a TIA postoperatively. In the stroke group 1 patient died of a cerebral hemorrhage arisen on 4th postop day, being symptoms free until then. 2 patients had a TIA (1 arm weakness and 1 amaurosis). 3 patients experienced a worsening NIHSS: 2 had a stroke while the third had a hyperperfusion syndrome (all CTs negative during hospital stay). Median NIHSS at discharge was 2 (1-3). Overall the death/stroke rate was 5.9% for TIA patients and 10.5% for stroke.

Conclusions: Early surgery had higher perioperative mortality and stroke rates than expected. This can probably be acceptable for TIAs if compared to their risk of stroke. Stroke patients most likely need a better selection in order to pick up those who can benefit from early treatment.

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PP6.

Effectiveness of Pharmacologic Risk Modification in the Prevention of Symptom Development in Patients with Asymptomatic Carotid Artery Occlusive Disease

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Objectives: Patients with carotid artery occlusive disease (CAOD) are often not offered intervention under the notion that aggressive medical management might reduce their risk of stroke. This study was undertaken to investigate the effectiveness of multiagent treatment with antiplatelets, statins, beta blockers, and angiotensin converting enzyme inhibitors (ACE I) in the prevention of neurologic complications in patients with asymptomatic 60-79% internal carotid artery (ICA) stenosis.

Methods: Using a case-control design the medical regimen of 176 patients with 60-79% ICA stenosis who developed symptoms of stroke or transient ischemic attack (TIA) was compared to that of 218 asymptomatic patients with similar ICA stenosis range. Odds ratio (OR) and 95% confidence intervals (CI) were calculated for each of the variables of interest, whereas level of significance was determined with Fisher's exact test. A logistic regression equation that utilized interaction expansion variables was modeled to assess combined effects of individual medication classes on the development of neurologic symptoms.

Results: Both groups were matched for age, gender, range of stenosis in the diseased carotid artery and the occurrence of hypertension, hyperlipidemia, diabetes, coronary artery disease, smoking, and chronic obstructive pulmonary disease. Cases were more likely to have a history of stroke than the controls (OR: 2.07, CI: 1.17-3.68, p=0.007). The odds of developing either stroke or TIA was not affected by the use of antiplatelets (OR: 1.4, CI: 0.85-1.93, p=0.09), statins (OR: 1.02, CI: 0.66-1.58, p=0.9), ACE I (OR: 0.82, CI: 0.54-1.25, p=0.34), or beta blockers (OR: 0.96, CI: 0.63-1.46, p=0.85). The lack of correlation persisted after adjustment for possible counfounding effect among the different medication classes. The interaction logistic regression model demonstrated that only the combination of antiplatelet with beta blockers decrease the odds for occurrence of symptoms (OR: 0.34, CI: 0.14-0.78, p=0.011).

Conclusion: Multiagent pharmacotherapy does not provide a definitive neurologic risk reduction in patients with moderate asymptomatic carotid stenosis. Larger prospective studies are necessary to address the role of pharmacotherapy in neurologic complication prevention among patients with CAOD.

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